SONY

3-756-669-22(2)

Mini Hi-Fi Component System

Operating Instructions

COMPACT disc DIGITAL AUDIO

FH-B500/B500K
FH-B510
MHC-510

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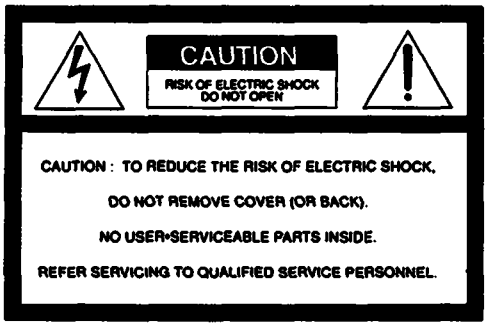
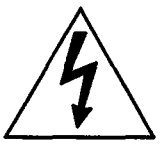
WARNING

For the Customers in the U.S.A.

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION (For the customers in the U.S.A.)
This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION
You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Owner's Record

The model and serial numbers are located at the rear of the unit. Record serial number in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No._____ Serial No._____

CAUTION

The use of optical instruments with this product will increase eye hazard.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

For the Customers in Canada

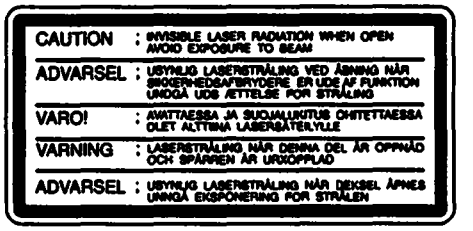
CAUTION:
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

For the Customers in Europe and the U.K.
To prevent fire or shock hazard, do not expose the unit to rain or moisture.
To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE
VARNING : LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD
ADVARSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN

NOTICE FOR CUSTOMERS IN THE UNITED KINGDOM
A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS 1362, (i.e. marked with ◆ or ♡ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

IMPORTANT
If the plug supplied is not suitable for the socket outlets in your home, it should be cut off and an appropriate plug fitted in accordance with the following instructions.

The wires in this main leads are coloured in accordance with the following code:
Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red. Do not connect either wire to the earth terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

WARNING
To prevent shock hazard, do not insert the plug cut off from the mains lead into a socket outlet. This plug cannot be used and should be destroyed.

How to Use This Manual

This manual applies FH-B510 for East Europe, MHC-510 for the U.K., the U.S.A. and Canada, and FH-B500/FH-B500K for Australia. The differences between them are indicated below:

Yes: Equipped No: Not equipped

Destination	USA and Canada	European countries and UK	Australia
PHONO jack	No	Yes	No
VIDEO jack	Yes	No	Yes
MIX MIC jack	Yes	No	Yes

Receivable bands
USA and Canada:
FM/AM
UK and East European countries:
FM/MW/LW
Australia: FM/MW/SW

Equipped antenna for FM reception
MHC-510: FM lead antenna
FH-B500/FH-B500K/FH-B510:
Telescopic antenna

- In this manual, the illustrations of the unit are illustrated as FH-B500K, unless specified otherwise.
- Use the page numbers in "Parts Identification" on pages 6 and 7 as an index to find out how to use the buttons and controls.

Precautions

On operating voltage
Before operating the stereo system, check that the operating voltage of your system is identical with the voltage of your local power supply.

USA and Canadian model	120 V AC, 60 Hz
East European models	220-230 V AC, 50/60 Hz
U.K. and Australian models	240 V AC, 50 Hz

On safety
- The system is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the system itself has been turned off.
- Unplug the system from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Should any solid object or liquid fall into the component, unplug the system and have the component checked by qualified personnel before operating it any further.
- AC power cord must be changed only at the qualified service shop.

On installation
Place the stereo system in a location with adequate ventilation to prevent internal heat build-up in the system.

On moisture condensation in the CD player section
If the system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens inside the unit. Should this occur, the CD player will not operate. In this case, remove the disc and leave the system turned on for about an hour until the moisture evaporates.

If you have any question or problem concerning your stereo system, please consult your nearest Sony dealer.

For the customers in the USA
- As the laser beam used in this unit is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.
- For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS."

Table of Contents

Getting Started

Connections 4
Parts Identification 6
Preparations 7
Clock Setting 8

Using Your Stereo

Audio Adjustment 8
CD Playing 9
Radio 13
Tape Playback 14
Recording 15
Tape Dubbing 16
CD Recording 16
Timer-Activated Operation 19
Microphone Mixing (Only for USA, Canadian and Australian models) 20
Singing Along (Only for FH-B500/ FH-B500K) 21

General

Maintenance 21
Specifications 22
Troubleshooting Guide 23

Connections

Notes on connection

- Connect the AC power cord last.
- Cord plugs and jacks are color coded. Red plugs and jacks are for the right channel (R) and white ones for the left channel (L).

Speaker Cord Connection A

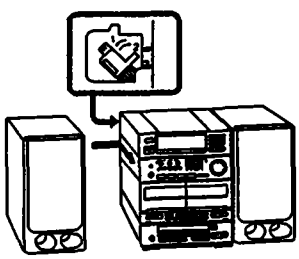
1 Strip 15 mm (5/8 inches) of the speaker cord coating from the end of the cord.

2 Connect the right speaker to R, with the red cord to + and the black cord to –. Connect the left speaker to L, with the red cord to + and the black cord to –.

Attaching the Speakers to the Main Unit — Only for FH-B500/ B500K/B510

1 Unlock the stopper and slide the speaker so that it hooks to the system.

2 Lock the stopper.



AM Loop Antenna Connection B

Connect the supplied loop antenna to the AM and ⏚ terminals.

FM Lead Antenna Connection — Only for MHC-510 C

Connect the supplied FM lead antenna to the FM 75Ω terminal and extend horizontally.

For Better AM Reception D

Connect the 6- to 15-meter (20- to 50-feet) insulated wire to the AM terminal. Connect the ⏚ terminal to a good ground.

CAUTION:

When you use an external antenna, be sure to ground it against lightening. Never connect the ground wire to a gas pipe. Doing so is extremely dangerous.

For Better FM Reception E

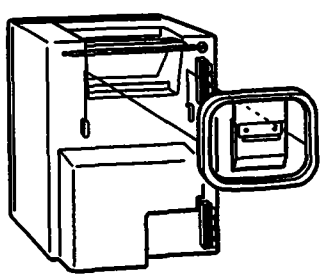
For the European and UK models:
Connect the outdoor FM antenna to the FM 75Ω terminal, using 75-ohm coaxial cable and IEC standard socket connector.

For the models for other countries:
Connect the outdoor FM antenna to the FM 75Ω and ⏚ terminals, using 75-ohm coaxial cable.

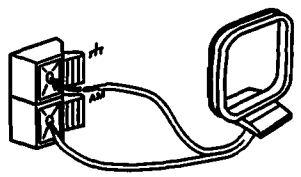
Power Connection

Connect the AC power cord to a wall outlet after all other connections are completed.

To attach the AM loop antenna to the main unit in order to carry the unit (except for MHC-510) See the illustration below.

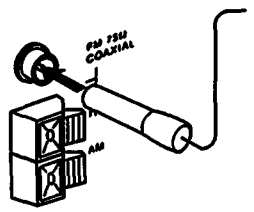


B

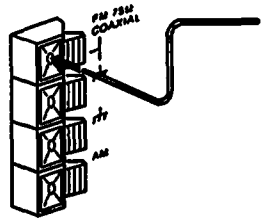


C

For UK

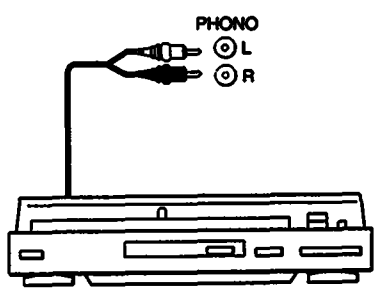


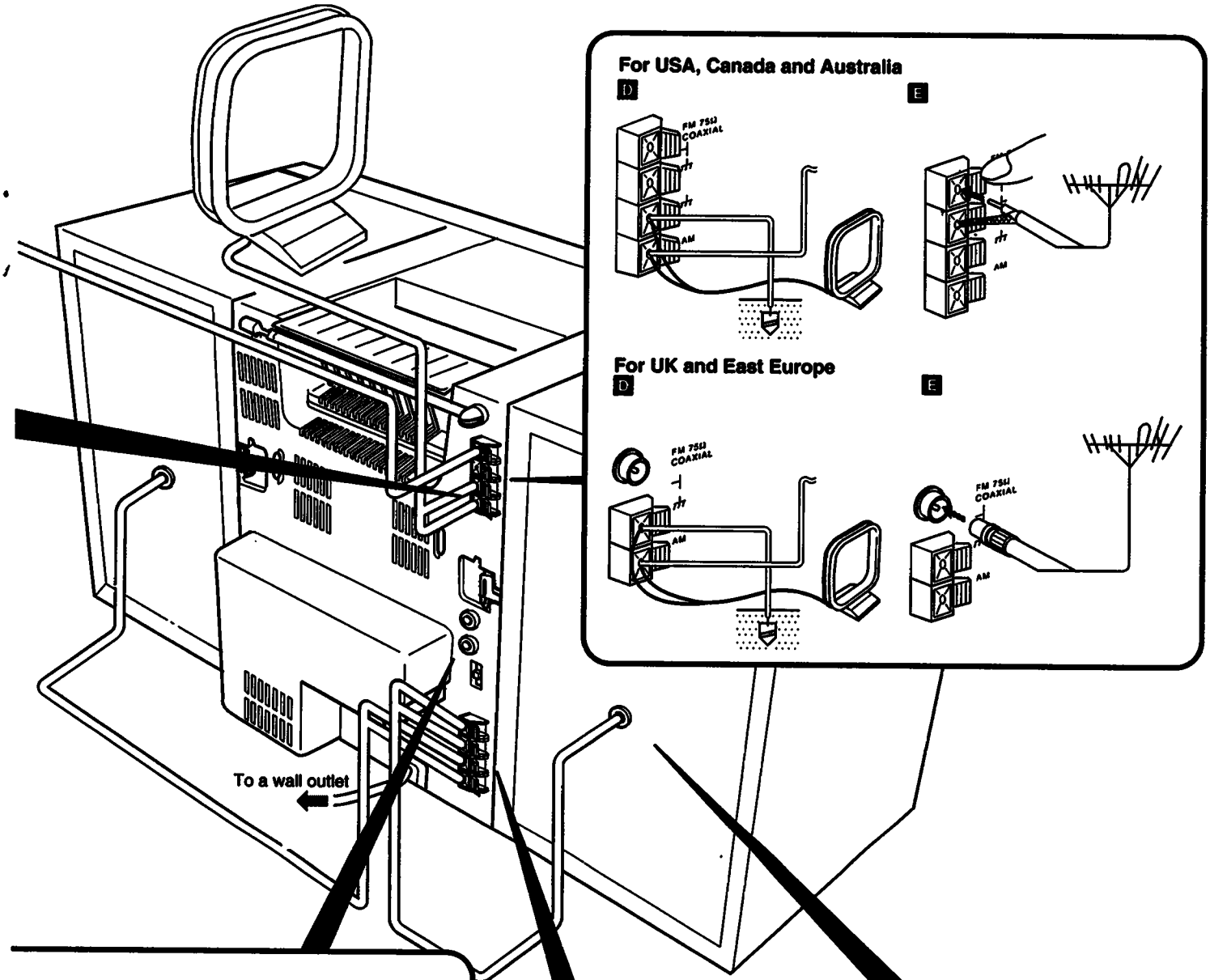
For USA andCanada



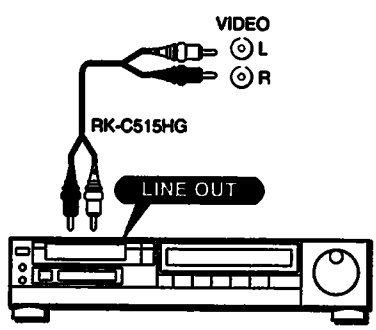
Adding Other Components to the System

Turntable system
(For UK and East European models)
You can connect a turntable system to the PHONO jacks.
To listen to the turntable system
Press PHONO on the front panel or FUNCTION on the remote commander until "PHONO" appears in the display.

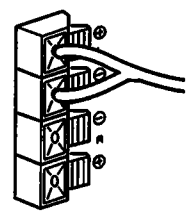




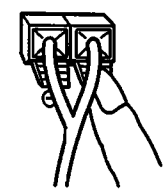
VTR
(For other country models)
You can connect a VTR, etc. to the VIDEO jacks.
To listen to the connected equipment
Press VIDEO on the front panel or FUNCTION on the remote commander until "VIDEO" appears in the display.



A

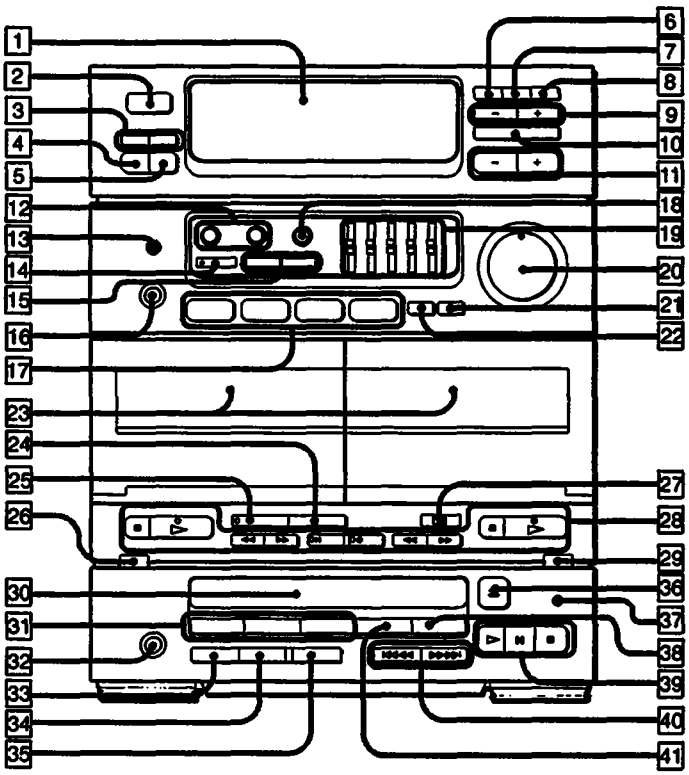


Only for MHC-510



Parts Identification

Refer to the pages indicated in parenthesis for use of the buttons.



Front Panel

Tuner Section

1 Display window
2 POWER ON/STANDBY switch
3 CLOCK SET buttons (8)
TIMER SET button (8, 19)
CLOCK DISPLAY button (8)
4 TIMER CONT (control) button (21)
5 SLEEP button (20)
6 MEMORY/NEXT button (14, 19)
7 AUTO button (13)
8 MODE button (13)
9 TUNING –/+ buttons (13)
10 BAND button (13)
11 PRESET/TIMER –/+ buttons (14, 19)

Amplifier section

12 MIC 1 LEVEL and MIC 2 LEVEL controls (only for FH-B500K) (20)
13 MIX MIC 1 jack (only for FH-B500K) (20)
14 KARAOKE PON button and indicator (only for FH-B500/B500K) (21)
15 MULTIPLEX buttons (only for FH-B500K) (21)
MAIN button and indicator
SUB button and indicator
16 MIX MIC jack (only for MHC-510 for USA and Canada and FH-B500) (21)
MIX MIC 2 jack (only for FH-B500K) (20)
17 Function selecting buttons
Pressing these buttons with the power turned off automatically turns on the power, and selects the function.
18 DIGITAL ECHO control (only for FH-B500K) (20)
19 Graphic equalizer controls (8)
20 VOLUME control (8)
21 DBFB button and indicator (8)
22 S-SUR (simulated surround) button and indicator (8)

Cassette deck section

23 Cassette holders
24 CD SYNCHRO (synchronized) button (17, 18, 19)
25 HIGH SPEED DUBBING button and indicator (16)
26 ⏏ (eject) button (for deck A) (14)
27 DOLBY NR selector (15)
28 Tape operating buttons (14 – 19)
▷: Play button and indicator, ▶▶: Fast forward button, ◀◀: Rewind button, ■: Stop button, ●REC: Record button and indicator (for deck B only), ❚❚ PAUSE: Pause button and indicator (for deck B only)
29 ⏏ (eject) button (for deck B) (15)

CD player section

30 Disc tray
31 PLAY MODE button
CONTINUE button (10, 11, 12)
SHUFFLE button (10, 11)
PROGRAM button (11, 12)
32 HEADPHONES jack (8)
33 CHECK button (11, 12)
34 CLEAR button (11, 12)
35 EDIT button (17, 18)
36 ⏏ OPEN/CLOSE button (9)
37 Remote sensor
38 TIME button (9)
39 CD player operating buttons (9 – 12, 16 – 20)
▷: Play button, ❚❚: Pause button, ■: Stop button
40 ⏮◀◀/▶▶⏭ (manual search/AMS*) buttons (10, 11, 12, 17, 18)
41 REPEAT button (10)

** AMS is the abbreviation of Automatic Music Sensor.*

Preparations

Remote commander

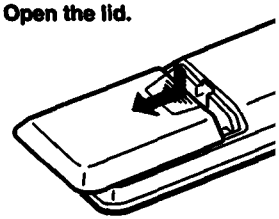
[1] SLEEP button (20)
[2] FUNCTION button
[3] Deck A operating buttons
▶: Play button
▶▶: Fast forward button
◀◀: Rewind button
■: Stop button
[4] CD operating buttons
▶: Play button
I◀◀/▶▶I: AMS* buttons
II: pause button
■: Stop button
[5] SYSTEM POWER button
[6] Tuner operating buttons
BAND button (13)
PRESET – buton (14)
PRESET + button (14)
[7] Deck B operating buttons
▶: Play button
▶▶: Fast forward button
◀◀: Rewind button
II: pause button
■: Stop button
●REC: Record button
[8] VOL (volume) +/– buttons (8)

** AMS is the abbreviation of Automatic Music Sensor.*

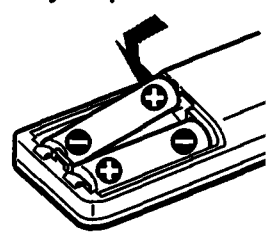
Battery Installation

Install two R6 (size AA) batteries supplied remote commander for control operation.

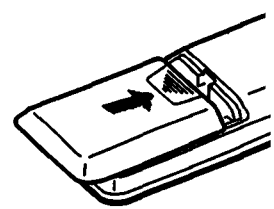
1 Open the lid.



2 Insert two R6 (size AA) batt matching the + and – on th to the + and – indications i battery compartment.



3 Close the lid.



Battery life

About half a year of normal opera expected when using the Sony S batteries. When the batteries are the commander cannot operate t system. When this happens, repl batteries with new ones.

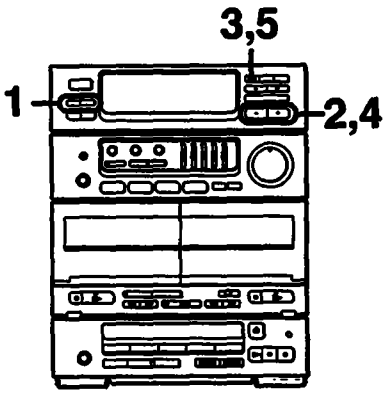
To avoid battery leakage

If the commander is not to be use long time, remove the batteries to damage caused by battery leakag corrosion.

Clock Setting

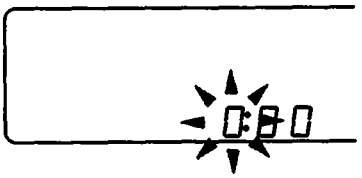
Setting the Clock

The built-in clock shows the time in the display. Set the clock correctly to enjoy timer-activated features (see pages 19 – 20).

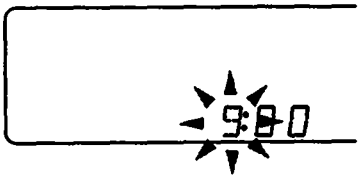


Example: Set to 9:25 in the morning.

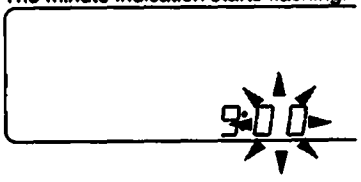
1 Press TIMER SET and CLOCK DISPLAY at the same time.
The hour indication starts flashing.



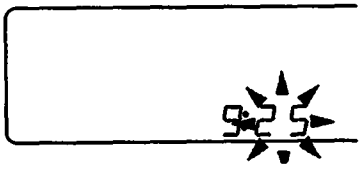
2 Set the hour with PRESET/TIMER – or +.



3 Press MEMORY/NEXT.
The minute indication starts flashing.



4 Set the minute with PRESET/TIMER – or +.



5 Press MEMORY/NEXT.
The clock starts running.

To change to the clock display from other displays

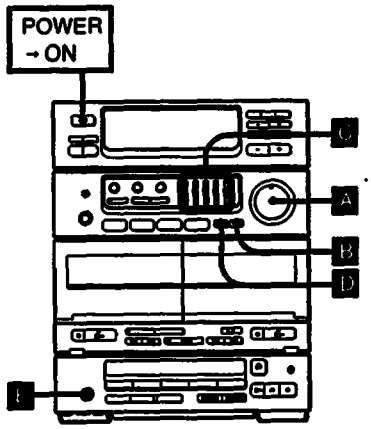
Press CLOCK DISPLAY.
The clock is displayed for about 4 seconds, then the clock changes into the normal display.

Information on the time

The European and U.K. models show the time in 24-hour cycle.
The models for other countries show the time in 12-hour cycle.
AM 12:00=midnight
PM 12:00=noon

When a power interruption occurs
The clock and timer settings are all erased, and "0:00" ("AM 12:00") will flash in the display.

Audio Adjustment



Volume Adjustment A

Turn VOLUME clockwise to increase the sound level, or counterclockwise to decrease it.
(Or press VOL + or – on the remote commander.)

Sound Quality Adjustment

To reinforce bass B

Press DBFB*.
Each time you press the button, bass reinforcement switches on and off.

To adjust sound quality to your preference C

Adjust the graphic equalizer controls for the right and left speakers. Right and left channels cannot be adjusted separatedly.

100 Hz: Boost or cut heavy bass.
400 Hz: Adjust the power, spaciousness and warmth of the sound.
1 kHz: Provides more presence for vocals.
4 kHz: Boosts a brighter sound and reduces strindency.
12 kHz: Highlights the delicate quality of instrumental sound.

To activate surround effect for stereo sound D

Press S-SUR** during a stereo sound reproduction. This creates the atmosphere of a movie theater or concert hall. This function is not effective for a monaural sound.

****DBFB=Dynamic Bass Feedback***
*****S-SUR=Simulated surround***

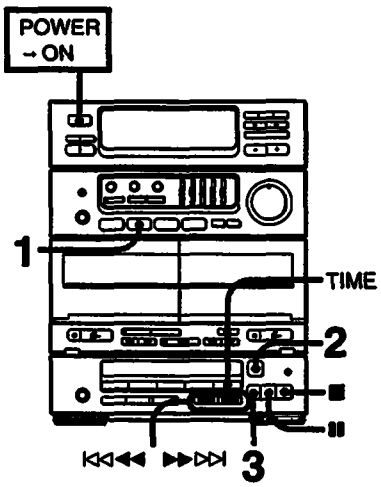
Personal Listening E

Connect headphones to HEADPHONES. No sound comes from the speakers.

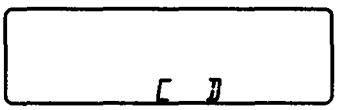
CD Playing

Playing the Entire Disc

Let's play from the first selection.

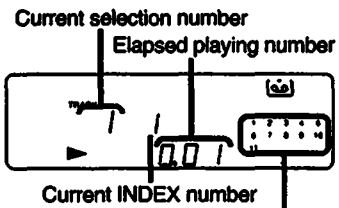


1 Press CD (or FUNCTION on the remote commander repeatedly).
"CD" appears in the display.



2 Press ⏏ OPEN/CLOSE to open the tray.
Place a disc with the printed side up.

3 Press ▷.
The tray closes and play starts.



To stop play
Press ■.

To stop for a moment during play
Press II.
To resume play, press it again or ▷.

To stop play and open the tray
Press ⏏ OPEN/CLOSE.

Caution on adjusting volume
Do not turn up the volume while listening to a portion with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.

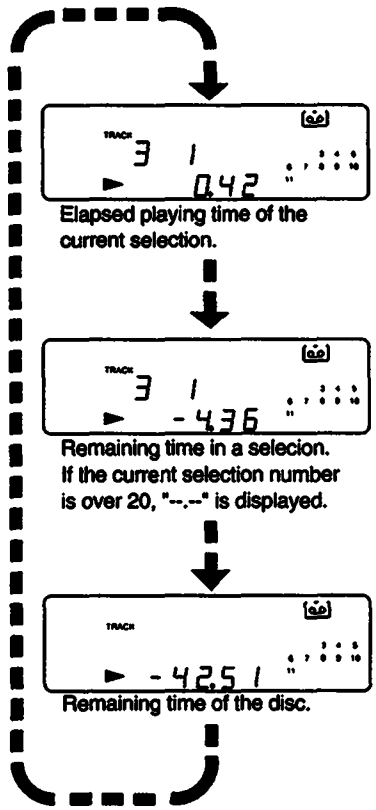
To play an 8 cm (3-inch) CD
Place it on the inner circle of the tray. If the disc is provided with an adaptor, first remove it. Do not put a normal CD (12 cm/5-inch) on top of an 8 cm CD.

Notes on handling discs
- To keep the disc clean, handle the disc by its edge. Do not touch the surface.

- Do not stick paper or tape onto the disc.
- Do not expose the disc to direct sunlight or heat sources such as a hot air duct, nor leave it in a car parked in direct sunlight as there can be a considerable rise in the temperature.
- After playing, store the disc in its case.

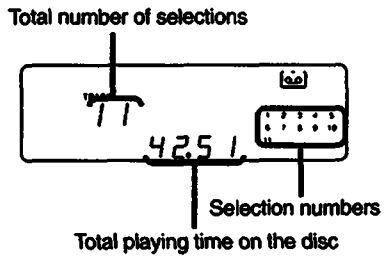
Information Display

To change the time display
Press TIME during play.
The display changes to give you the following information.


Elapsed playing time of the current selection.
Remaining time in a selecion.
If the current selection number is over 20, "--.--" is displayed.
Remaining time of the disc.

Note
You can also see the information above by pressing TIME during shuffle, delete and program play.
However, the remaining time of the disc shows "– –.– –" when the disc has more than 20 selections.

To display the total playing time of the disc
Press TIME in stop mode.
The following appears for about 4 seconds.



This information appears also when you close the tray by pressing ⏏ OPEN/CLOSE

Locating a Particular Selection — Automatic Music Sensor (AMS)

The AMS locates the beginning of a selection.

To locate the beginning of the current or preceding selection
Press I◁◁◀◀ (or I◀◀ on the remote commander) as many times as required.

To locate the beginning of the succeeding selection
Press ▶▶▷▷I (or ▶▶I on the remote commander) as many times as required.

Locating a Particular Point in a Selection

You can locate any particular point in the selection. This function works during either play or pause. This operation is not possible with the remote commander.

To search while monitoring the sound
To move forward at high speed
keep ▶▶▷▷I depressed and release it at the desired point.

To move backward at the high speed
keep I◁◁◀◀ depressed and release it at the desired point.

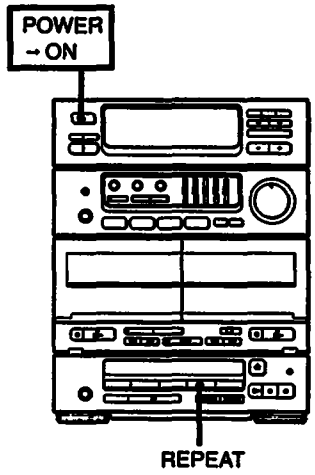
To search quickly
1 Press II to set the unit in pause mode.
2 Keep I◁◁◀◀ or ▶▶▷▷I depressed.
The search speed increases, but there is no sound. Find the desired point by observing the display and release the button.
3 Press II again or ▷ at the desired point to play.

One Touch Play

Press CD when the power is turned off.
If a disc is inserted, you can listen to the disc without pressing any other buttons. If not, you can turn on the power but cannot start play.

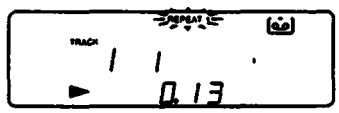
Playing Repeatedly — Repeat Play

You can choose between two different repeat play modes. One repeats all the selections in the current mode; the other repeats any given selection.
This operation is not possible with the remote commander.



To repeat all the selections
Press REPEAT once during play so that "REPEAT" appears in the display.

To repeat a single selection
Press REPEAT twice while playing the desired selection so that "REPEAT 1" appears in the display.
(Operable only in normal play and delete play mode)

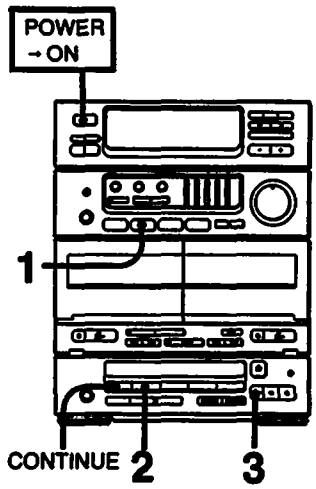


To cancel repeat play
Press REPEAT so that neither "REPEAT" nor "REPEAT 1" appears.

Note
Repeat play function works also during;
- *shuffle play*
- *delete play*
- *delete shuffle play*
- *program play.*
Multi-disc program play (see page 12) cannot be repeated.

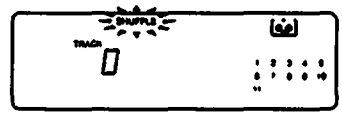
Playing in a Random Order — Shuffle Play

You can play all selections in a random order.
This operation is not possible with the remote commander.



1 Press CD.
"CD" appears in the display.

2 Press SHUFFLE.
"SHUFFLE" appears in the display.



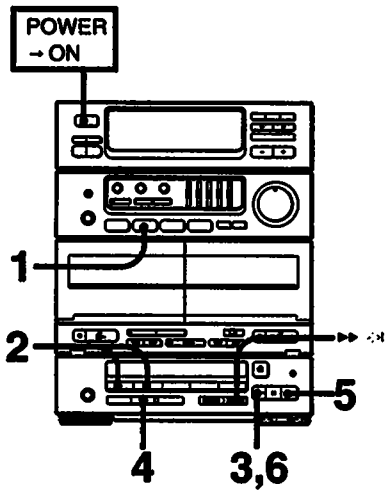
3 Press ▷.
" " appears and then shuffle play starts.

To stop playing
Press ■.

To cancel shuffle play
Press CONTINUE.
"SHUFFLE" disappears, and play continues in normal play mode.

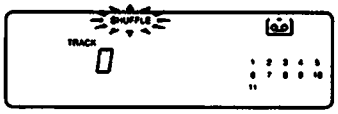
Playing Only the Desired Selections — Delete Play

You can delete unwanted selections and play the remaining selections either in normal or shuffle play mode.
This operation is not possible with the remote commander.

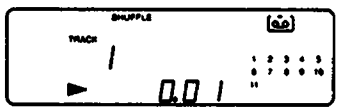


1 Press CD.
"CD" appears in the display.

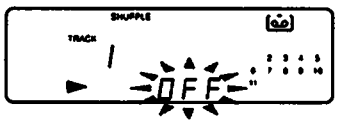
2 Press SHUFFLE or CONTINUE.
"SHUFFLE" appears in the display only if you have pressed SHUFFLE; that is, the unit is now engaged in shuffle play mode.



3 Press ▷.
Shuffle or normal play starts.

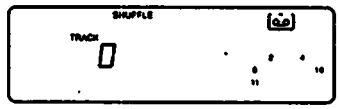


4 Press CLEAR while unwanted selections are being played.
The number of the selection and "OFF" appears in the display when the selection is deleted.



To skip selections
Press ▶▶▷▷| (or ▶▶| on the remote commander). These selections are just skipped but not deleted.

5 Press ■ after deleting all the unwanted selections.
All the selection numbers which you have not deleted appear in the display.

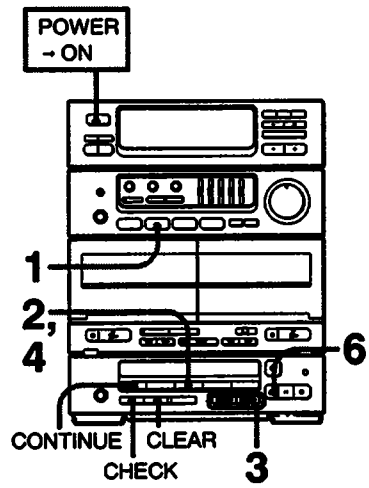


6 Press ▷.
- If "SHUFFLE" is displayed, the remaining selections are played in shuffle play mode. (Delete shuffle play)
- If "SHUFFLE" is not displayed, the remaining selections are played in normal play mode. (Delete play)

To restore all the selections you have deleted
Press ■ in stop mode.

Playing in a Desired Order — Program Play

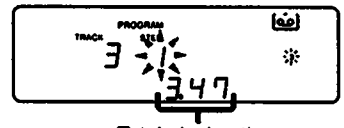
You can make a program by designating up to 24 selections in the order you want them to be played, while checking the total playing time.
This operation is not possible with the remote commander.



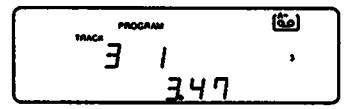
1 Press CD.
"CD" appears in the display.

2 Press PROGRAM.
"PROGRAM" appears in the display.

3 Press |◁◁ ◀◀ or ▶▶ ▷▷| to choose a selection.
The total playing time is displayed. If it is satisfactory, go to the next step. If not, choose another selection instead.


Total playing time

4 Press PROGRAM while the selection number is flashing.
The selection is chosen and the selection number turns to light.



5 Repeat steps 3 and 4 to program other selections.

6 Press ▷.
All the programmed selections are played in the programmed order.

To program a pause
Press II.
"P" appears and the total playing time is reset to 0.00.

To stop play
Press ■.
To restart the same program play, press ▷.

To cancel the program play
Press CONTINUE.
The program is erased and the play continues in normal play mode.

To check the program
Press CHECK.
Each time you press CHECK, the number of the selection and the order to be played appear in the display. After the last selection is displayed, "END" appears in the display.

(to be continued)

(continued)

To erase a selection

1 Press CHECK so that the number of the selection you wish to erase appears in the music calendar. You cannot erase the selection being played.
2 Press CLEAR.

To erase the entire program

Press ■ once in stop mode; twice during play. The program is also erased when you turn off the system.

If "– – . – – " is displayed instead of the total playing time during programming or during play

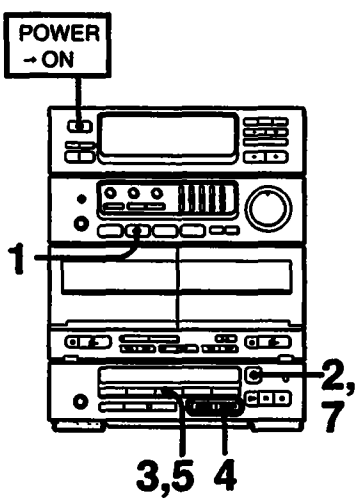
- *You have programed a selection the number of which is over 20.*
- *The total time has exceeded 100 minutes.*

To check the remaining time during play

Press TIME once to see the remaining time of the selection being played; twice to see the total remaining time of the whole program; once more to return to the initial display. If you have inserted a pause, the display shows the remaining time until the pause

Designating the Playing Order of Up to 6 Discs — Multi-disc Program

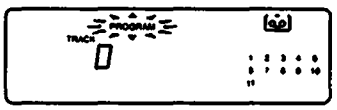
You can make a program by designating up to 24 selections from a maximum of 6 discs in the order you want them to be played. At the same time, you can adjust the total playing time of the program. This function is convenient for editing tapes from different discs.
This operation is not possible with the remote commander.



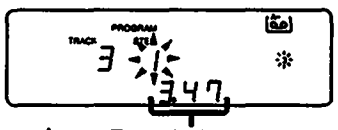
1 Press CD.
"CD" appears in the display.

2 Press ⏏ OPEN/CLOSE and insert the first disc.

3 Press PROGRAM.
"PROGRAM" appears in the display.

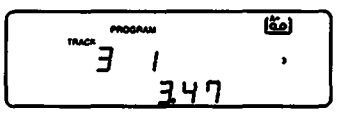


4 Press ⏮◀◀ or ▶▶⏭ to choose a selection.
The total playing time is displayed. If it is satisfactory, go to the next step. If not, choose another selection instead.



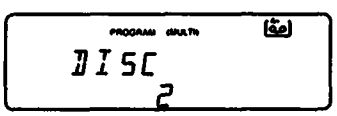
Total playing time

5 Press PROGRAM while the selection number is flashing.
The selection is chosen and the selection number turns to light.



6 Repeat steps 4 and 5 to program other selections from the first disc.

7 Press ⏏ OPEN/CLOSE and remove the first disc and insert the second disc.
"PROGRAM (MULTI)" and "DISC 2" appear in the display.



8 Repeat steps 4 though 7 to program other selections from other discs.
Up to 24 selections from a maximum of 6 discs can be programmed.
The total playing time for all selections appears in the display.

To play the program

Insert the first disc and press ▷.
When "DISC 2" appears in the display, replace the first disc with the second disc and press ▷. Continue replacing the discs until the last disc. When playing of the last disc is over, "DISC END" appears in the display. The unit returns to the initial standby condition of program play from the first disc.

To stop playing

Press ■.

To check the number of the disc inserted

Press TIME in stop mode.
The number of the disc appears.

To cancel the program play

Press CONTINUE.

To check the program

Press CHECK.
Each time you press CHECK, the number of the disc and the selection appear. After the last selection is displayed, "END" appears in the display.

To erase a selection from the end of the program

1 Insert the last disc.
2 Press CLEAR.
Each time you press CLEAR, the last selection is erased from the end of the program.
If you insert a pause in your program, you cannot erase the selections programmed before the pause.

To erase the entire program

Press ■ once in stop mode; twice during play.

Notes on multi-disc program

- *You cannot use the repeat play function.*
- *Do not insert a pause in your program when you want to use the CD SYNCHRO button.*

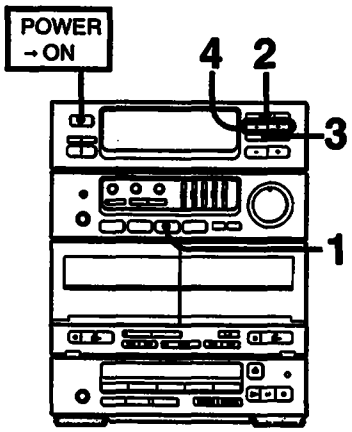
If "– – . – – " is displayed instead of the total playing time during programming or during play

- *You have programed a selection the number of which is over 20.*
- *The total time has exceeded 100 minutes.*

Radio

The automatic tuning enables you to find a station when its signal is strong enough. When the signal is too week, use the manual tuning.

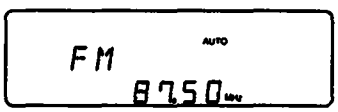
Automatic Tuning



1 Press TUNER (or FUNCTION on the remote commander repeatedly).
"TUNER" appears in the display.

2 Press AUTO so that "AUTO" appears in the display.

3 Press BAND repeatedly until the desired band appears.
As you press BAND, the band changes as follows:
USA and Canadian model:
→ FM → AM →
UK and East European models:
→ FM → MW → LW →
Australian model:
→ FM → MW → SW →



4 Press TUNING – or +.
Scanning starts, and then stops when a station is tuned in.

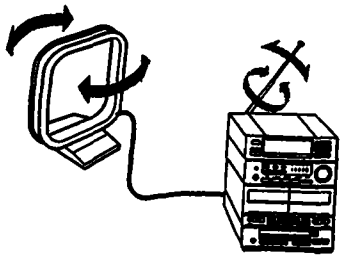
5 Repeat step 4 until the desired station is tuned in.

Indicator in the display

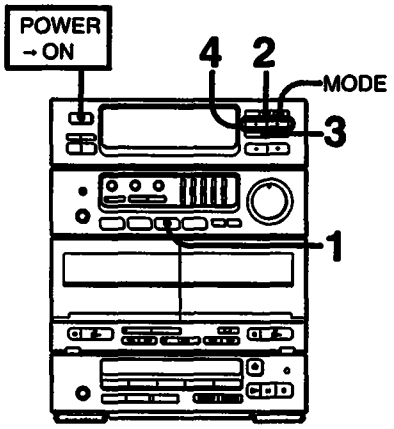
TUNED: Appears when a station with sufficient signal strength is tuned in.
STEREO: Appears when an FM stereo program with sufficient signal strength is received.

Antenna adjustment

For FM reception, adjust the length and direction of the telescopic antenna (for FH-B500, FH-B500K and FH-B510).
For AM (MW, LW and SW) reception, find the best location for the supplied AM loop antenna.



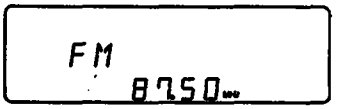
Manual Tuning



1 Press TUNER (or FUNCTION on the remote commander repeatedly).
"TUNER" appears in the display.

2 Press AUTO so that "AUTO" disappears from the display.

3 Press BAND repeatedly until the desired band appears.



4 Press TUNING - or + repeatedly until the desired station is tuned in.

When an FM program is noisy or hard to receive

Press MODE so that "MONO" appears in the display. There will be no stereo effect, but the reception will be improved.
Press the button again to restore the stereo effect.

Changing the MW (AM) tuning interval (except for the UK and European Models)

The MW (AM) tuning interval is preset at the factory to 10 kHz for the USA and Canadian model, and 9 kHz for the models for other countries. If you use the system where the frequency allocation system is different from the preset interval, change the interval as follows:

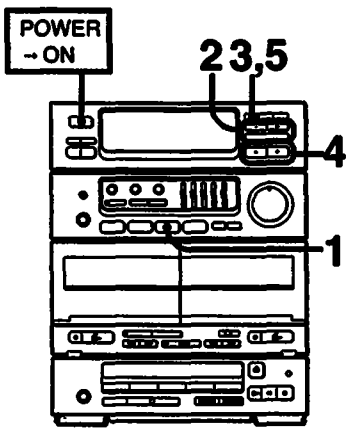
1 Turn on the power.
2 Tune in any MW (AM) station.
3 Turn off the power.
4 Turn the power back on while pressing TUNING +.

To reset the interval, follow the same procedure.

Important
When the interval is changed, stored stations will be erased from the memory.

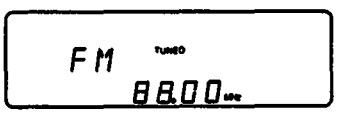
Storing Stations

You can store up to 20 FM stations and 10 MW stations and 10 LW (SW) stations (for the USA and Canadian model, 20 FM stations and 10 AM stations) in a desired sequence, so that you can tune in the stored station directly by entering the preset station number.
This operation is not possible with the remote commander.

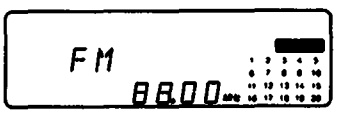


1 Press TUNER.
"TUNER" appears in the display

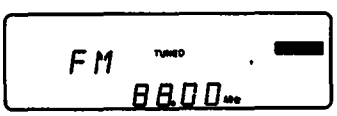
2 Press BAND and TUNING – or + to tune in the desired station.



3 Press MEMORY/NEXT.
"MEMORY" and the preset station numbers appear in the display.



4 While "MEMORY" is on (for about 4 seconds), press PRESET/TIMER – or + to select a desired preset number.



5 Press MEMORY/NEXT.
"MEMORY" disappears and the station is stored in the preset number.

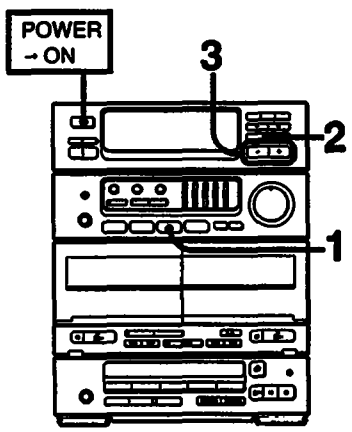
6 Repeat step 2 to 5 for each station to be stored.

If you cannot store a station successfully
Press MEMORY/NEXT again so that "MEMORY" appears, and then proceed with steps 4 and 5 above.
Be sure to operate while "MEMORY" is on. (about four seconds.)

When you have selected the wrong preset station number
Press MEMORY/NEXT again and then proceed with steps 4 and 5.

To change the preset station
Store a desired station at the desired preset number by proceeding with the above steps. The station previously preset will be erased. Erasing only is not possible.

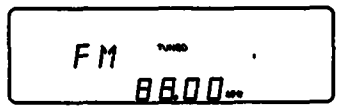
Tuning in a Preset Station



1 Press TUNER (or FUNCTION on the remote commander repeatedly).
"TUNER" appears in the display.

2 Press BAND to select a desired band.

3 Press PRESET/TIMER – or + (or PRESET –/+ on the remote commander) to select the desired preset number.

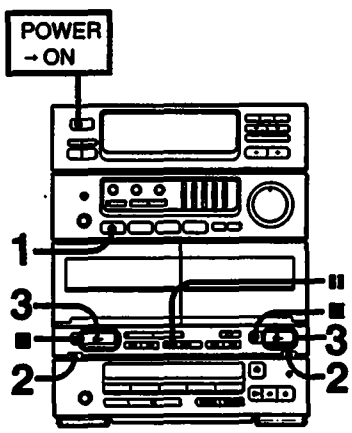


One Touch Play

Press TUNER when the power is turned off. You can listen to the last-received station, without pressing any other buttons.

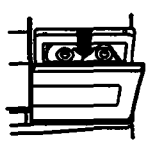
Tape Playback

Playback Operation



1 Press TAPE (or FUNCTION on the remote commander repeatedly).
"TAPE" appears in the display.

2 Press ≙ and insert a tape in deck A or B.



3 **Press ▷.**
Playback starts.

To stop playback
Press ■.

To stop for a moment during play (Deck B only)
Press ❚❚ PAUSE.
To resume play, press it again.

If you play both decks at the same time
You hear the sound from deck A.

When listening to the tape recorded with the Dolby noise reduction system*
Set the DOLBY NR selector to ON. The setting is active for both decks. This system is provided with the Dolby B NR system.

What is the Dolby NR system?
Dolby NR (noise reduction) system reduces tape hiss noise in low-level high-frequency signals. The system boosts these signals during recording and lowers them during playback.

* *Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.*
"DOLBY" and double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

One Touch Play (Deck B only)

Press TAPE when the power is turned off. If a tape has been inserted in deck B, you can listen to the tape without pressing any other buttons. If not, you can turn on the system but cannot start playback.

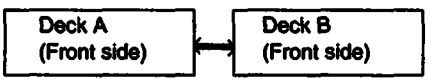
Playing back Automatically after Fast Winding — Auto Play

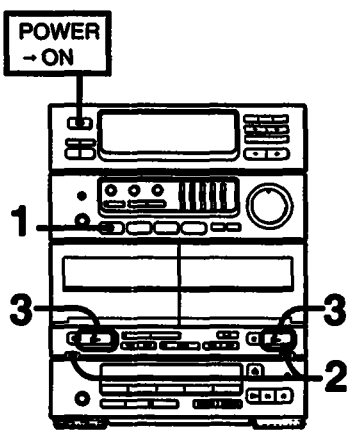
This function starts playback automatically from the beginning of the tape after fast winding.

Press ▷ while keeping ◀◀ pressed.

Playing Both Decks in Succession — Relay Play

The Relay Play function plays back the tapes in deck A and B continuously and in consecutive order. However, the tapes played back once must be turned over or replaced with other tapes to enable the continuation of the Relay Play function.





1 **Press TAPE (or FUNCTION on the remote commander repeatedly).**
"TAPE" appears in the display.

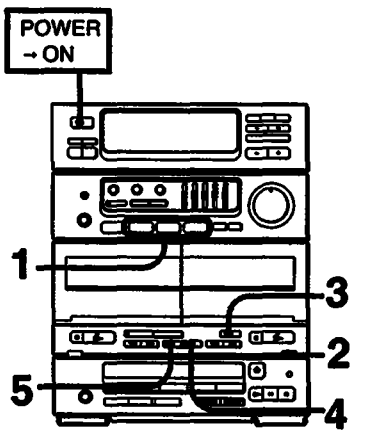
2 **Press ⏏ and insert recorded tapes in both decks.**

3 **Press ▷ on either deck.**

To stop relay play
Press ■ on the playing deck.

Recording Operation (Deck B)

Use TYPE I (normal) or TYPE II (CrO_2) tapes for recording.



1 **Select a program source you want to record with the function selecting buttons (except TAPE).**

2 **Press EJECT and insert a blank tape into deck B.**

3 **Set to DOLBY NR switch to ON or OFF.**

4 **Press ● REC.**
Deck B enters recording pause mode.

5 **Press ❚❚ PAUSE.**
Recording pause mode is released and recording starts.

6 **Play the program source selected in step 1 after 10 seconds.**

Note
Make sure to advance the leader tape (the beginning of the tape) before playing the program source; otherwise, you cannot record the beginning of the selected program source play.

To stop recording
Press ■.

(to be continued)

Recording (Continued)

(continued)

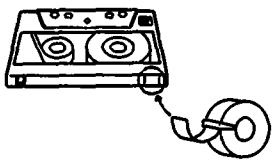
Notes:
- *When the tab on the cassette has been removed, the ● REC button does not operate.*
- *The recording level is fixed and cannot be adjusted manually.*
- *Equalizer effect cannot be recorded.*

If whistling noise is heard during MW and LW recording
(only for UK and East European models)
Slide the ISS (Interference Suppress Switch) at the rear to the position, whichever best reduces the noise.

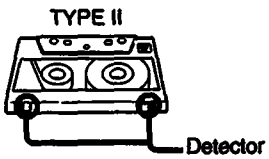
Notes on Cassettes

To protect the recording
Break off the tab on the left shoulder on the cassette side of which recording is to be protected.

To re-record the cassette
Cover each opening with plastic tape.



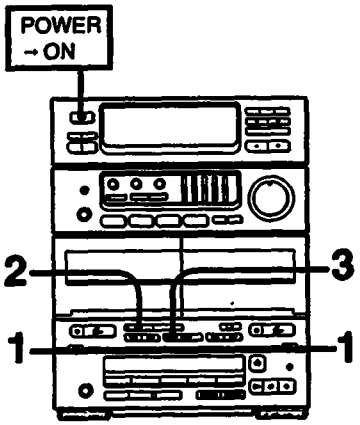
When using a type II (CrO_2) cassette, be careful not to cover the detector slots which are necessary for automatic tape type detection.



Tape Dubbing

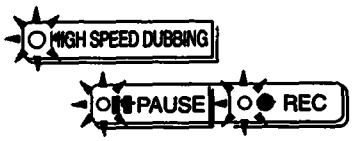
Dubbing the Whole Tape at High Speed

This operation is not possible with the remote commander.



1 Press EJECT, and insert a recorded tape in deck A and a blank tape in deck B.

2 Press HIGH SPEED DUBBING.
Deck B enters recording pause mode.



3 Press II PAUSE.
Dubbing starts.

To stop dubbing
Press ■ on deck B.

Is it necessary to set DOLBY NR?
No. The tape in deck B is automatically recorded in the same state as the tape in deck A.

If the indicator on the HIGH SPEED DUBBING button flashes 3 times and disappears
The tab(s) of the cassette inserted into deck B has (have) been removed. Dubbing is not possible on that cassette. Cover the opening with plastic tape.

Is it possible to listen to program sources other than tape during high speed dubbing?
Yes. Any program source can be selected.

If you press CD SYNCHRO during high speed dubbing
CD playback starts if a disc is placed on the tray; however, dubbing cannot be interrupted.

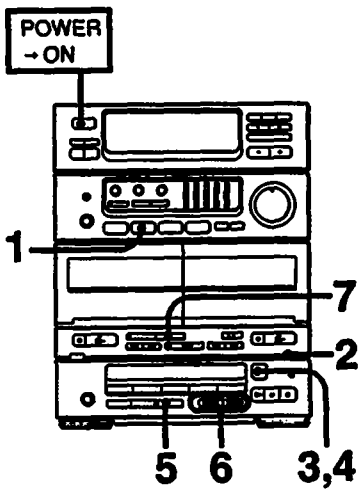
CD Recording

Fading Out at the Designated Time — Time Fade

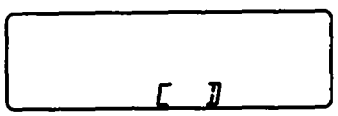
You can have the disc play fade out at the end by designating the playing time so that the selection at the end of the tape fades out naturally without breaking abruptly in the middle.

How Time Fade functions
Deck B records the selections in the order they appear on the disc. Five seconds before the designated time, the recording level falls gradually. At the designated time, the recording ends and the CD player enters pause mode. This function works for both sides of the tape by designating the time once. This function works also during repeat, shuffle, and program play.

Time Fade operation
This operation is not possible with the remote commander.



1 Press CD.
"CD" appears in the display.



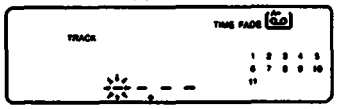
2 Press ⏏ and insert a blank tape into deck B.
Advance the leader tape before inserting it into the cassette holder; otherwise, you cannot record the beginning of the selected program source play.

3 Press ⏏ OPEN/CLOSE and place a disc.

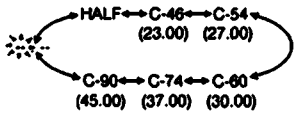
4 **Press ⏏ OPEN/CLOSE again to close the tray.**

Note:
Make sure that the total number of selections and the total playing time appear in the display.

5 **Press EDIT three times.**
"TIME FADE" appears in the display.



6 **Press I◁◁◀◀ or ▶▶▷▷I to designate the tape length.**
You can use a 46-, 54-, 60-, 74-, or 90-minute cassette tape. As you press these buttons, the minute display changes as follows:



When you choose "HALF"
The CD player fades out after playing just the half of the total playing time of the disc.

7 **Press CD SYNCHRO.**
Recording starts and then CD playing starts.

To stop recording
Press ■ on deck B and ■ on the CD player.

To record on the reverse side
The CD player fades out and enters pause mode at the designated time.
"TIME FADE B" appears in the display.
If you also want to record on the reverse side of the tape, reverse the tape, then press CD SYNCHRO.
When CD playback for the reverse side ends by fading out, the CD player enters the pause mode and the Time Fade is canceled.

To cancel Time Fade
During stop, press EDIT so that "TIME FADE" disappears.

When the playback of the disc ends during Time Fade.
Time Fade is still active. If you place another disc, the recording can be continued and will fade out when the total playing time of the discs reaches the designated time.

To check the remaining time during Time Fade
When you press TIME twice, the remaining time until the designated time is displayed.

If you press I◁◁◀◀ or ▶▶▷▷I
Time Fade will be canceled.

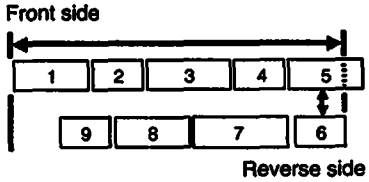
Is it possible to listen to program sources other than CD during CD recording?
No. If you select another function, the CD play stops and the selected function will be recorded.

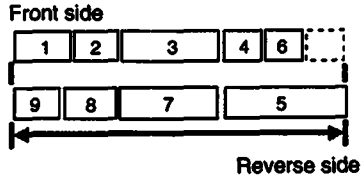
Note on the CD SYNCHRO button
If you press CD SYNCHRO;
- *While playing a CD, play is paused for about 3 seconds and then resumes.*
- *While recording a CD, recording is stopped.*
- *While playing back a tape, the function is changed from TAPE to CD and, if a disc is placed on the tray, CD play starts.*
- *While CD and deck B are in pause mode, CD starts playing and deck B starts recording.*

Editing the CD for Recording

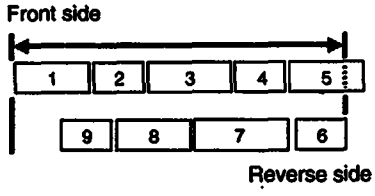
The CD player automatically edits the selections on a disc according to the tape length. There are two ways of editing: Time Edit and Just Edit.

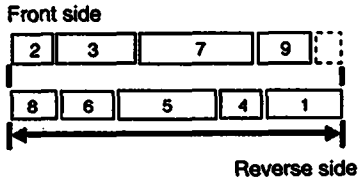
How Time Edit functions
The CD player selects the selections so that the total recording time of the selections is within the designated tape length and so that the order of the selections changes as little as possible. This function is convenient when you know the available recording length of the tape.
The CD player selects the selections from the first one in the disc, summing up each playing time. When the total playing time exceeds the designated tape length, the last selection is eliminated and replaced with another selection which is not longer than the remaining time. The eliminated selection is recorded on the reverse side. If you do not want to miss recording some specific selections, you can select them beforehand.





How Just Edit functions
The CD player chooses the selections so that the total recording time of the selections is within the designated tape length and so that you can record as many selections as possible by changing the order of the selections. This function is convenient when you want to record as many selections as possible.
The CD player selects the selections so that the total playing time best fits length of side A. Then the player selects from the remaining selections to record on side B. If you do not want to miss recording specific selections, you can select them beforehand.

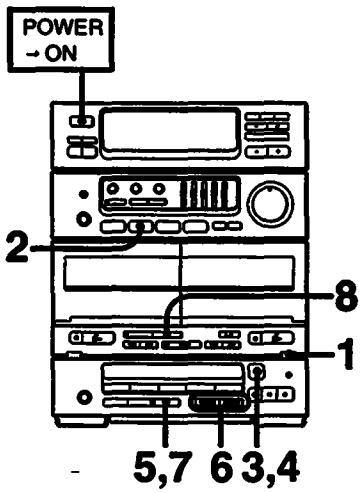




Note:
You can edit only the selections from selection numbers 1 to 20 in the disc using Time Edit and Just Edit.

Time Edit and Just Edit operations

This operation is not possible with the remote commander.



1 Press ⏏ and insert a blank tape into deck B.
Advance the leader tape before inserting the tape into the cassette holder; otherwise, you cannot record the beginning of the selected program source play.

2 Press CD.
"CD" appears in the display.

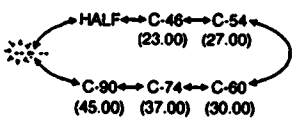
3 Press ⏏ OPEN/CLOSE and place a disc.

4 Press ⏏ OPEN/CLOSE to close the tray.

Note:
Make sure that the total number of selections and the total playing time appear in the display.

5 Press EDIT and display "EDIT" (Time Edit) or "JUST EDIT".
To choose Time Edit, press EDIT once.
To choose Just Edit, press EDIT twice.

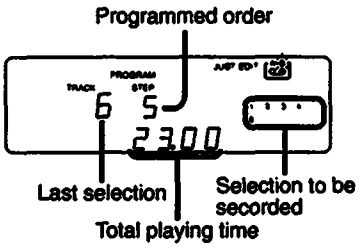
6 Press ⏮◀◀ or ▶▶⏭ to designate the tape length.
You can use a 46-, 54-, 60-, 74-, or 90-minute cassette tape. As you press these buttons, the minute display changes as follows:



When you choose "HALF" during Time Edit
The CD player divides the selections in the disc between side A and side B without changing their order and plays them so that no selection is left out of the recording.

When you choose "HALF" during Just Edit
The CD player programs the selections by changing their order so that the recording time on one side of the tape is half the total playing time. However, the program of side A may be a little longer than that of side B because the CD player distributes all the selections of the entire disc.

7 Press EDIT.
The selections to be recorded on one side are determined automatically. Then the display shows:



For recording on both sides
Press EDIT again.
The selections to be recorded on the other side are determined.

To add selections (Link function)
If there is remaining time even after programming all the selections on the disc, "LINK" and the selection numbers that can be recorded within the remaining time flash in the display. You can add these selections to the program. When you want to record the selections of another disc, replace the disc. The selection numbers that can be recorded flash in the same way.

- Press EDIT.
  All the selections that can be recorded are programmed.

8 Press CD SYNCHRO.
The recording starts and then the CD playing starts.

To record on the reverse side

When the CD player enters pause, reverse the the tape and press CD SYNCHRO.

To stop recording

Press ■ on deck B or ■ on the CD player.

To select the desired selections beforehand

You can place priority on some selections to be recorded by selecting them first using the program function of the CD player (see pages 11and 12) before performing Time Edit or Just Edit

To check the program

Press CHECK.
In the display window, "A" appears while checking the program for side A, and "B" appears while checking the program for side B.

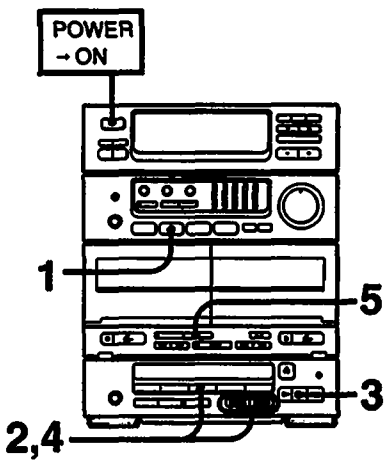
Notes:
- *Time Edit and Just Edit do not function when you program more than 20 selections on one disc.*
- *Do not press any other buttons than those mentioned in the procedure during Time Edit or Just Edit.*

To stop programming during Just Edit
For some discs with many selections, it may take a while for programming. In this case, press ■ while the system is programming. Programming procedure is stopped, but you can still get the program though the program length is not the same as you have designated.

To use the CD synchronized recording function with more than one disc
Use the multi-disc program function (page 12). Press CD SYNCHRO each time you change the disc.

Programming the Selections while Checking the Total Playing time — Program Edit

You can adjust the total playing time to the tape length while making a program.
This operation is not possible with the remote commander.



1 Press CD.
"CD" appears in the display.

Timer-Activated Operation

2 Program desired selections for side A. (See pages 11 and 12, "Playing in a Desired Order — Program Play.")

Note:
Make sure that "A" is lit in the display.

3 Press II on the CD player
"P" appears in the display and the total playing time is reset to 0. "B" lights up.

4 Program desired selections for side B. (See pages 11 and 12, "Playing in a Desired Order — Program Play.")

5 Press CD SYNCHRO.
The recording starts and then the CD playing starts.

To record on the reverse side

When the CD player enters pause, reverse the the tape and press CD SYNCHRO.

To stop recording

Press ■ on the deck B and ■ on the CD player.

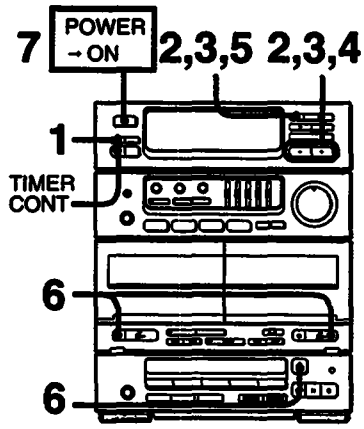
Note:
Be sure to program the selections so that the total playing time of each side does not exceed the tape length of one side.

The power can be turned on and off automatically so that you can record a radio program while you are out, wake up to music, etc.. The preset timer-on and -off time remain until you reset them or you disconnect the power cord. So, you do not have to set the timer every day to wake up to music. (However, the timer setting for recording a radio program is good for only once.)

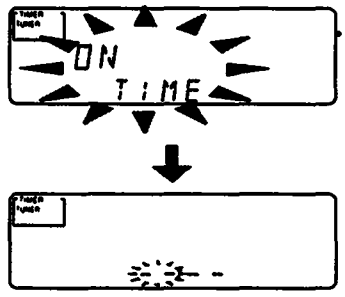
Before setting the timer

- Make sure the clock is set correctly. (See page 8.)
- If you want to record a radio program, be sure to insert a tape long enough.

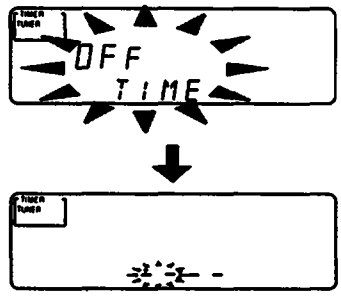
Setting the Timer



1 Press TIMER SET.
"ON TIME" appears and the hour digits flash in the display.



2 Set the hour and minute of the timer-on time by pressing PRESET/TIMER - or +, and MEMORY/NEXT.
"OFF TIME" appears and the hour digits flash again.



3 Set the hour and minute of the timer-off time by pressing PRESET/TIMER - or +, and MEMORY/NEXT.
The program source flashes.

4 Select the program source by pressing PRESET/TIMER – or +.
As you press the button (– or +), the source changes as follows:

→TUNER↔TUNER REC←
→TAPE PLAY↔CD PLAY←

To listen to the radio:
1) **Press MEMORY/NEXT. The frequency display appears.**
2) **Press BAND to select the desired band.**
3) **Press PRESET/TIMER – or + to select the desired station.**

To record a radio program
1) **Press MEMORY/NEXT. The frequency display appears.**
2) **Press BAND to select the desired band.**
3) **Press PRESET/TIMER – or + to select the desired station.**
4) **Insert a tape in deck B.**

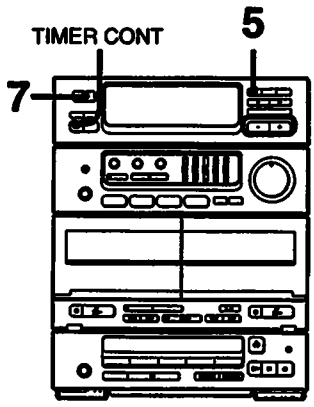
To listen to a tape: go to step 5.

To listen to a CD:
1) **Press MEMORY/NEXT. The selection number display appears.**
2) **Press PRESET/TIMER – or + to choose the desired selection. (Only from selection numbers 1 to 20)**

(to be continued)

Timer-Activated Operation (continued)

(continued)



5 Press MEMORY/NEXT.
The preset items appear sequentially.

6 Prepare the program source by inserting a disc or a tape.
- For listening to a tape:
  Insert the tape in deck B.
- For listening to CD
  Insert a disc

7 Press POWER to turn off the system.
At the timer-on time, the system turns on automatically.

Note
Timer setting is possible while the power is turned off; however, it is necessary to turn on the power for inserting a disc.

To change timer settings

1 Press TIMER SET.
The timer-on hour flashes.
2 Press MEMORY/NEXT until the item to be changed flashes.
3 Press PRESET/TIMER – or + to change the item to the desired one.
4 Press MEMORY/NEXT until the timer-on time appears.
The display, then shows the preset items sequentially, and return to the previous display.

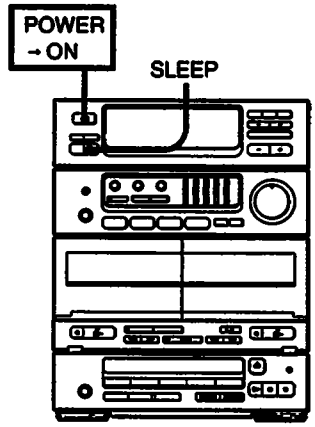
When you do not want to operate the timer

Press TIMER CONT (control) so that "TIMER" disappears from the display.
To reactivate the timer, press TIMER CONT to display "TIMER."

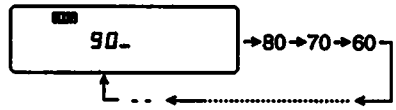
When the power is already on at the preset time
The function will be automatically changed to the preset one, even if you are playing a program of another function.

Sleep Timer Operation

By setting the sleep timer, the system power can be turned off after the preset duration (up to 90 minutes).



Press SLEEP during play to select the desired duration in minutes.
As you press SLEEP, the indication changes as follows:



To disengage the sleep timer

Set the timer to "– – ."

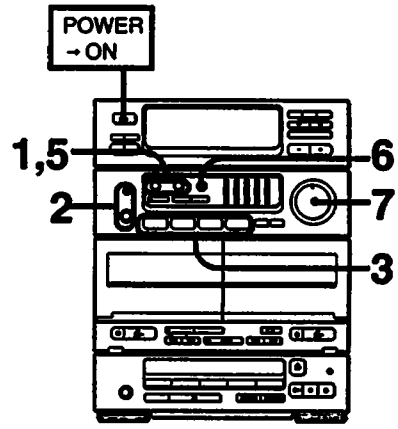
To turn off the system before the system is turned off by the sleep timer

Press POWER.

To check the remaining time before the sleep timer turns off the system
Press SLEEP once, and the remaining time appears in minutes. The display returns to the previous indication automatically after several seconds.

Microphone Mixing (Only for USA,Canadian and Australian models)

Mixing Operation



1 (Only for FH-B500K)
Turn down the MIC LEVEL (1, 2) control(s).

2 Connect (a) microphone(s) to the MIX MIC (1, 2) jack(s).

3 Press one of the function buttons (or FUNCTION repeatedly on the remote commander) to select program source and play it.

4 Sing or speak into the microphone.

5 (Only for FH-B500K)
Adjust the microphone level with the MIC LEVEL (1, 2) control(s).

6 (Only for FH-B500K)
Adjust the echo level with the DIGITAL ECHO control.

7 Adjust the VOLUME control.

When the mixing is over

Be sure to disconnect the microphone.

(Only for FH-B500K)
Then set the microphone level to the minimum level with the MIC LEVEL (1, 2) control(s).

Recording the sound mixed with a source other than a tape in deck A

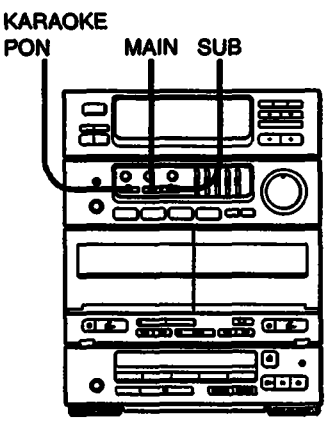
1 Mix the sound as described above.
2 Insert a tape in deck B.
3 Start recording.

Recording from the microphone only

1 Press CD (or FUNCTION repeatedly on the remote commander) to select the CD player. If a CD is being played, press ■ to stop playing.
2 Start recording.

To stop howling (acoustic feedback)
Placing the microphone too close to the speakers may cause howling. Move the microphone away from the speakers or change the direction it faces.

Singing Along (Only for FH-B500/B500K)



Reducing the Vocals of a CD — Vocal Reduction

You can sing with any desired stereo CD by pressing KARAOKE PON which minimizes the singer's voice.

To reduce the vocal
Press KARAOKE PON so that the indicator turns on.

To cancel the vocal reduction
Press the button again so that the indicator turns off.

Notes on the vocal reduction
- *Utilize stereo recorded sources. Not only would the singer's voice be reduced, but instrumental sounds may also be reduced with monaural recorded sources.*
- *The singers's voice may not be reduced completely for the following.*
  - *Stereo recorded sources containing only few instruments*
  - *Duet*
  - *Sources with strong echoes and chorus*
  - *Sources with singer's voice deviating from the center*
  - *Sources with singer's voice with extreme soprano or tenor*
- *When vocal reduction is used, the play sound will be monaural.*
- *Vocal reduction is canceled if you press MAIN or SUB while playing a multiplex tape.*

Singing Along with Multiplex Tapes (only for FH-B500K)

This feature can be made use of when you enjoy singing along with the microphone connected to the system, while playing back a multiplex tape.

To sing along with a multiplex tape
Press either MAIN or SUB according to your multiplex tape.
You can choose from;
- hearing only the instrumental music, or
- hearing only the singer's voice in the tape, along with your voice through the michrophone.

To hear both channel sounds
press either MAIN or SUB again (the same one you have pressed before) so that neither indicator is turned on.

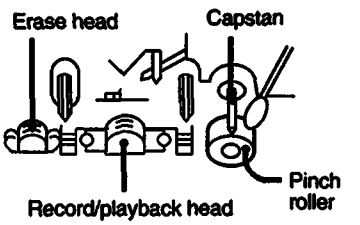
Note
This function is not used at the same time with vocal reduction (KARAOKE PON).

What is a multiplex tape?
Instrumental music and vocals were recorded separately on the right channel and on the left channel. Therefore, when playing back a tape, instrumental music comes from one speaker and vocals come from the other speaker separately.

Cleaning the Heads and the Tape Paths

Clean after every 10 hours of operation and before recording for optimum record/ playback quality.

1 Press EJECT to open the cassette holders.
2 Slightly moisten the tip of a cotton swab with cleaning fluid or alcohol.
3 Wipe the parts shown below:



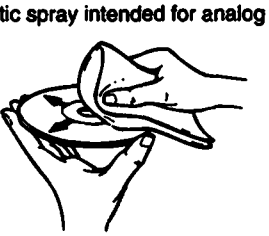
Do not insert a cassette until cleaned areas are completely dry.

Demagnetizing the Heads

After 20 to 30 hours of use, it is necessary to remove residual magnetism built up on the heads using any commercially available demagnetizer.
For demagnetizing procedure, refer to the instruction manual of the demagnetizer.

Cleaning Discs

When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.
Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.



Cleaning the Cabinet

Use a soft cloth slightly moistened with mild detergent solution.

Specifications

AUDIO POWER SPECIFICATIONS (For the customers in the USA)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:
With 6 ohm loads, both channels driven, from 60 Hz - 20 kHz; rated 20 watts per channel minimum RMS power, with no more than 1% total harmonic distortion from 250 miliwatts to rated output.

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range
East European models: 65.0 – 74.0 MHz
87.5 – 108.0 MHz
Other country models: 87.5 – 108.0 MHz
Antenna FM lead antenna (for MHC-510)
Telescopic antenna (for other models)
Antenna terminals 75 ohm unbalanced
Intermediate frequency 10.7 MHz

AM tuner section

Tuning range
USA and Canadian model
AM: 530 – 1,710 kHz
UK and East European models
MW: 531 – 1,602 kHz
LW: 153 – 279 kHz
Australian model:
MW: 531 – 1,602 kHz
SW: 5.95 – 17.9 MHz
Antenna AM loop antenna
External antenna terminals
Intermediate frequency 450 kHz

Amplifier section

For UK and East European model:
Continuous RMS power output:
25+25 watts (6 ohms at 1 kHz, DIN)
30+30 watts (6 ohms at 1 kHz, 5% THD)
Music power output:
75+75 watts (6 ohms at 1 kHz, 10% THD)
For USA and Canadian model:
Continuous RMS power output:
30+30 watts (6 ohms at 1 kHz, 5% THD)
For Australian model:
Continuous RMS power output:
30+30 watts (6 ohms at 1 kHz, 5% THD)
Peak music power output:
300 watts
Inputs
For FH-B500 MIX MIC (minijack): Sensitivity 1 mV, impedance 600 ohms
VIDEO (phono jack): sensitivity 250 mV, impedance 47 kilohms
For FH-B500K MIX MIC 1, 2 (minijack): Sensitivity 1 mV, impedance 600 ohms
VIDEO (phono jack): sensitivity 250 mV, impedance 47 kilohms
For FH-B510 PHONO (phono jack): sensitivity 5 mV, impedance 47 kilohms
For MHC-510
UK and European models:
PHONO (phono jack): sensitivity 5 mV, impedance 47 kilohms
USA and Canadian model:
VIDEO (phono jack): sensitivity 250 mV, impedance 47 kilohms
Outputs
HEADPHONES (stereo minijack): accept headphones of 8 ohms or more.
SPEAKERS: accept impedance of 6 to 16 ohms.

Cassette deck section

Recording system
4-track 2-channel stereo
Frequency response
(DOLBY NR OFF)
60 – 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S)
60 – 14,000 Hz (±3 dB), using TYPE II cassette (Sony UX-S)
Wow and flutter
0.1% WRMS ±0.3% (DIN)

Compact disc player section

System Compact disc digital audio system
Laser Semiconductor laser
Wavelength 780 – 790 nm

General

Destination	Power requirements	Power consumption
USA	120 V AC, 60 Hz	80 W
Canada		90 W
UK	240 V AC, 50 Hz	90 W
Australia		90 W
East Europe	220 – 230 V AC, 50/60 Hz	90 W

Dimensions
Approx. 225 x 285 x 265 mm (w/h/d) (8 7/8 x 11 1/4 x 10 1/2 inches) incl. projecting parts and controls
Mass Approx. 5.5 kg (12 lb 2 oz)

Speaker section (SS-H51 for FH-B510; SS-H10 for FH-B500/B500K and MHC-510)

Speaker system 3 way system
Speaker units
Woofer: 13 cm dia., cone type
Tweeter: 5 cm dia., cone type
Super tweeter: 2 cm dia., dome type
Enclosure Bass reflex
Frequency range 65 Hz – 20 kHz
Sensitivity 88 dB/W/m
Rated impedance 6 ohms
Dimensions
Approx. 175 x 285 x 235 mm (7 x 11 1/4 x 9 3/8 inches)
Mass Approx. 2.9 kg (6 lb 6 oz) net per speaker

Accessories supplied

AM loop antenna (1)
Remote commander (1)
Sony SUM-3 (NS) batteries (2)
FM lead antenna (1) (MHC-510 only)
Speaker cords (2) (USA and Canadian model only)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Troubleshooting Guide

The following checks will assist in the correction of most problems which you may encounter with your system. Before going through the check list below, first check the following points.
- The power cord must be connected firmly.
- The speaker connection must also be firm and correct.

Should any problem persist after you have made these checks, consult your nearest Sony dealer.

Radio Reception

Symptom	Cause (and Remedy)
"TUNED" flashes in the display.	Adjust the antenna.
"STEREO" flashes in the display.	Adjust the antenna.
Severe hum or noise.	Adjust the antenna. The signal strength is too weak. Connect the external antenna. (See page 4.) Connect the ground wire.
The stereo FM program cannot be received in stereo.	Press MODE so that "STEREO" appears. (See page 13.)

Cassette Deck Operation

Symptom	Cause (and Remedy)
Recording cannot be made.	No cassette in the cassette holder. The tab has been removed from the cassette. (See page 16.) The tape is wound completely.
Tape does not move even when ▷ is pressed.	The cassette deck is in pause mode.
Recording or playback cannot be made or there is a decrease in sound level.	Dirty heads. (See page 21.) Magnetic build-up on the record/playback heads. (See page 21.)
Excessive wow or flutter, or sound drop-out	Contamination of the capstans or pinch rollers. (See page 21.)
Insufficient erasure.	Magnetic build-up on the erase head. (See page 21.)
Increase of noise or erase of high frequencies.	Magnetic build-up on the erase head. (See page 21.)

CD player Operation

Symptom	Cause (and Remedy)
The disc tray does not close.	The disc is not placed correctly.
The disc play does not start.	Dirty disc (See page 21.) The disc is inserted upside down. The player is in pause mode. Moisture condensation. (See page 3.)
"NO DISC" is displayed.	There is no disc in the player.
Play does not start from the first selection.	The player is in program or shuffle mode. Press CONTINUE.
"77" is displayed.	▶▶▷▷I was continuously pressed at the end of the disc. Press I◁◁◀◀ (or I◀◀ on the remote commander) to return to the normal indication.

General

Symptom	Cause (and Remedy)
No sound.	Turn VOLUME clockwise. The headphones are connected. Disconnect them.
No sound from one channel or unbalanced left and right volume.	Check the speaker connections of the inoperative channel.
Reversed left and right sound.	Check the speaker connection and speaker location.
Lack of bass sound or apparently imprecise physical location of musical instruments.	Check the speaker connection for proper phasing.
Severe hum or noise.	The TV or VTR (VCR) is too close to stereo system. Separate the stereo system from the TV or VTR (VCR).
The remote commander does not function	The batteries are run down. Replace both batteries. There is an obstacle between the remote commander and the system. Remove the obstacle.